

Monetite Mineral Data Pronunciation Guide

General Information

- ☑ **Chemical Formula:** CaHPO_4
- ☑ **Composition:** Molecular Weight = 120.06 gm
 - Calcium 33.38 % Ca
 - Phosphorus 25.80 % P
 - Hydrogen 0.84 % H
 - Oxygen 39.98 % O

100.00 %
- ☑ **Empirical Formula:** $\text{CaH}(\text{PO}_3)$
- ☑ **Locality:** Link to MinDat.org Location Data.

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Crystallography

- ☑ **Axial Ratios:** a:b:c = 0.9857:1:0.95
- ☑ **Cell Dimensions:** a = 6.9, b = 7, c = 6.65, Z = 4; alpha = 96.35°, beta = 91.267°, gamma = 76.1° V = 309.80 Den(Calc) = 2.57
- ☑ **Crystal System:** Triclinic - Pinacoidal H-M Symbol (-1) Space Group: P1-
- ☑ **X Ray Diffraction:** By Intensity(I/I₀): 2.96(1) 3.35(0.75) 3.37(0.7)

Physical Properties

- ☑ **Cleavage:** [???] Indistinct, [???] Indistinct, [???] Indistinct
- ☑ **Color:** colorless, white, or light yellow.
- ☑ **Density:** 2.929
- ☑ **Diaphaniety:** Transparent to Translucent
- ☑ **Fracture:** Brittle - Uneven - Very brittle fracture producing uneven fragments.
- ☑ **Hardness:** 3.5 - Copper Penny
- ☑ **Luster:** Vitreous (Glassy)
- ☑ **Streak:** white

Optical Properties

- ☑ **Optical Data:** Biaxial (+/-), a=1.587-1.6, b=1.614, g=1.631-1.64, bire=0.0400-0.0440, 2V(Calc)=74, 2V(Meas)=70.

Classification

- Dana Class:** **37.1.1.1 (37)Anhydrous Acid Phosphates, etc**
(37.1)with miscellaneous formulae
(37.1.1)Dana Group
 37.1.1.1 Monetite $\text{CaHPO}_4 \cdot \text{P}^{+}$
 37.1.1.2 Weillite $\text{CaHAsO}_4 \cdot \text{P}^{+}$
- Strunz Class:** **VII/A.12-10 VII - Phosphates, Arsenates and Vanadates**
VII A - Waterfree phosphates $[\text{PO}_4]^{3-}$ without unfamiliar anions,
cations of very big size: Ca, Na and andre
VII A.12 - STRUNZ VII/A.12-10 - Phosphates, Arsenates and
Vanadates [Waterfree phosphates $[\text{PO}_4]^{3-}$ without unfamiliar anions,
cations of very big size: Ca, Na
 VII A.12-10 Monetite $\text{CaHPO}_4 \cdot \text{P}^{+}$
 VII A.12-20 Weillite $\text{CaHAsO}_4 \cdot \text{P}^{+}$
 VII A.12-30 Phosphammite $(\text{NH}_4)_2\text{HPO}_4 \cdot \text{P}^{+} \cdot 2\text{H}_2\text{O}$
 VII A.12-40 Biphosphammite $(\text{NH}_4, \text{K})\text{H}_2\text{PO}_4 \cdot 42\text{H}_2\text{O} \cdot 2\text{P}^{+}$
 VII A.12-50 Archerite $(\text{K}, \text{NH}_4)\text{H}_2\text{PO}_4 \cdot 42\text{H}_2\text{O} \cdot 2\text{P}^{+}$
 VII A.12-60 Oligite $\text{Na}(\text{Sr}, \text{Ba})\text{PO}_4 \cdot \text{P}^{+}$
 VII A.12-70 Schultenite $\text{PbHAsO}_4 \cdot \text{P}^{+} \cdot 2\text{H}_2\text{O}$

Other Information

- References:** PHYS. PROP.(Enc. of Minerals,2nd ed.,1990) OPTIC PROP.(Enc. of Minerals,2nd ed.,1990)
- See Also:** **Links to other databases for Monetite :**
 1 -Athena Mineralogy 2 - EUROmin Project 3 -Google Images 4 -MinMax 5 - WWW-MINCRYST 6 -École des Mines de Paris

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Brushite Mineral Data Pronunciation Guide

General Information

- ☒ **Chemical Formula:** $\text{CaHPO}_4 \cdot 2(\text{H}_2\text{O})$
☒ **Composition:** Molecular Weight = 172.09 gm
Calcium 23.29 % Ca 32.59 % CaO
Phosphorus 18.00 % P 41.24 % P_2O_5
Hydrogen 2.93 % H 26.17 % H_2O
Oxygen 55.78 % O

100.00 % 100.00 % = TOTAL OXIDE

- ☒ **Empirical Formula:** $\text{Ca}(\text{HPO}_4) \cdot 2(\text{H}_2\text{O})$
☒ **Environment:** One of the most common cave minerals, in guano deposits, and in phosphorites, formed at low pH by reaction of phosphate-rich solutions with calcite and clay.
☒ **Locality:** Found on Aves Island, Venezuela, west of Dominica, in the Caribbean Sea. Link to Mindat.org Location Data.
☒ **Name Origin:** To honor Professor George Jarvis Brush (1831-1912), American mineralogist, Yale University, New Haven, Connecticut, USA.

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- ☒ **Images:**



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Crystallography

- ☒ **Axial Ratios:** $a:b:c = 0.3881:1:0.4204$
☒ **Cell Dimensions:** $a = 5.88$, $b = 15.15$, $c = 6.37$, $Z = 4$; $\beta = 117.467^\circ$ $V = 503.49$
 $\text{Den(Calc)} = 2.27$
☒ **Crystal System:** **Monoclinic - Prismatic** H-M Symbol (2/m) Space Group: $I2/a$
☒ **X Ray Diffraction:** By Intensity(I/I_0): 7.62(1) 3.8(0.3) 1.9(0.1)

Physical Properties

- ☒ **Cleavage:** [010] Perfect, [001] Perfect
☒ **Color:** colorless, yellow, yellowish white, or white.
☒ **Density:** 2.328
☒ **Diaphaniety:** Transparent to Translucent
☒ **Hardness:** 2.5 - Finger Nail
☒ **Luster:** Vitreous - Pearly
☒ **Streak:** white

Optical Properties

▣ **Optical Data:** Biaxial (+), a=1.539, b=1.546, g=1.551, bire=0.0120, 2V(Calc)=80, 2V(Meas)=86.

Classification

▣ **Dana Class:** **39.1.1.1 (39)Hydrated Acid Phosphates, etc**
(39.1)A+ [HXO₄] · x(H₂O)
(39.1.1)Dana Group

39.1.1.1 Brushite CaHPO₄·2(H₂O) 12 a 20

39.1.1.2 Pharmacolite CaHAsO₄·2(H₂O) 1a 20

▣ **Strunz Class:** **VII/C.25-10 VII - Phosphates, Arsenates and Vanadates**
VII/C - Water-bearing phosphates without unfamiliar anions, cations of medium and big size: Fe, Mn, Zn, Mg and Ca, (NH₄)¹⁺
VII/C.25 - STRUNZ VII/C.25-10 - Phosphates, Arsenates and Vanadates [Water-bearing phosphates without unfamiliar anions, cations of medium and big size: Fe,

VII C.25-10 Brushite CaHPO₄·2(H₂O) 12 a 20

VII C.25-20 Pharmacolite CaHAsO₄·2(H₂O) 1a 20

VII C.25-30 Churchite-(Y) YPO₄·2(H₂O) A2 aAa Nb 20

VII C.25-40 Churchite-(Nd) Nd(PO₄)·2(H₂O) A10a 20

VII C.25-50 Churchite-(Dy) (Dy,Sm,Gd,Nd)(PO₄)·2(H₂O) A10a 20

Other Information

▣ **References:** NAME(AntBidBlaNic4) PHYS. PROP.(Enc. of Minerals,2nd ed.,1990)
 OPTIC PROP.(Enc. of Minerals,2nd ed.,1990)

▣ **See Also:** **Links to other databases for Brushite :**
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